

FIG. 2

09518495-030300

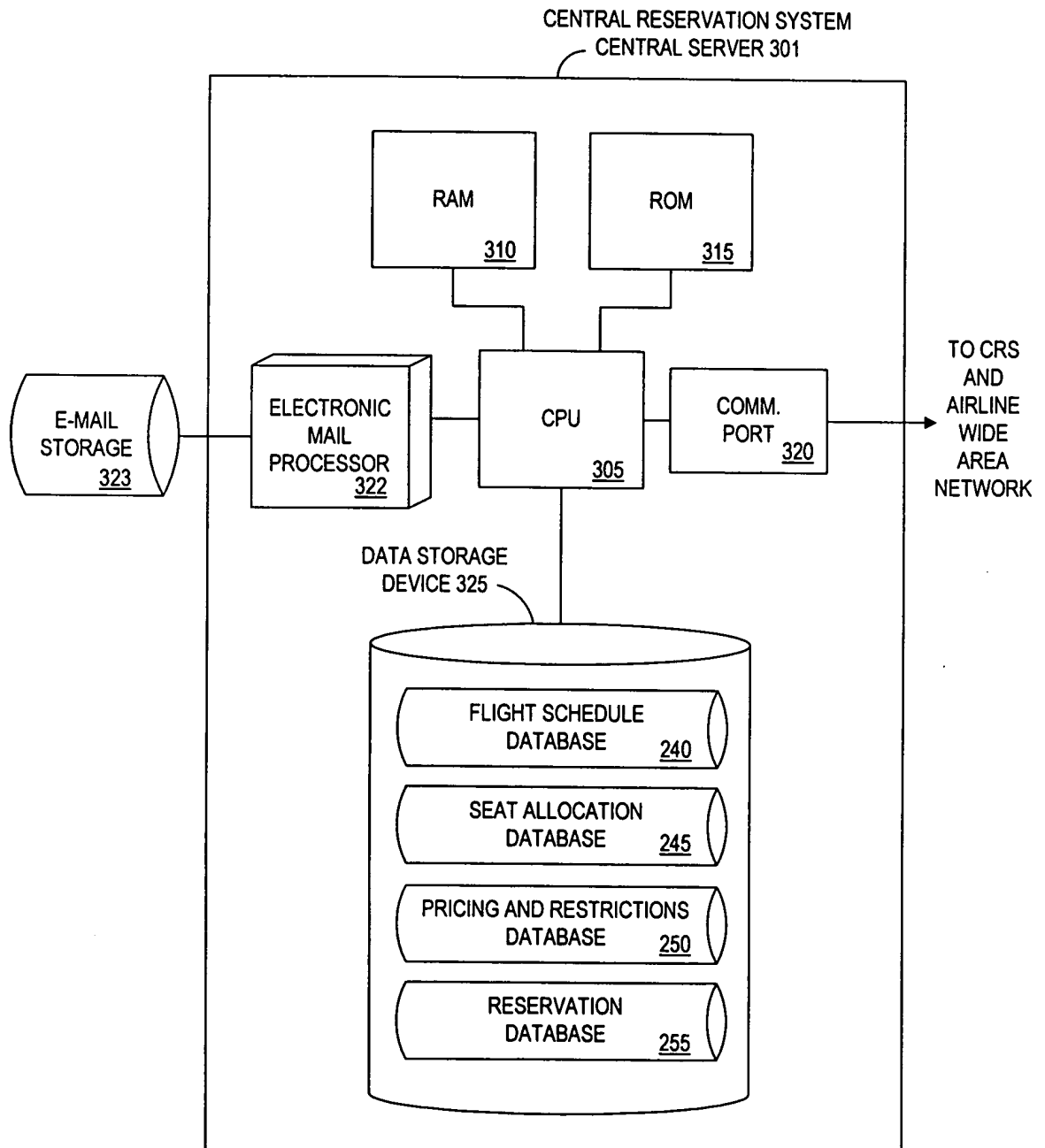


FIG. 3

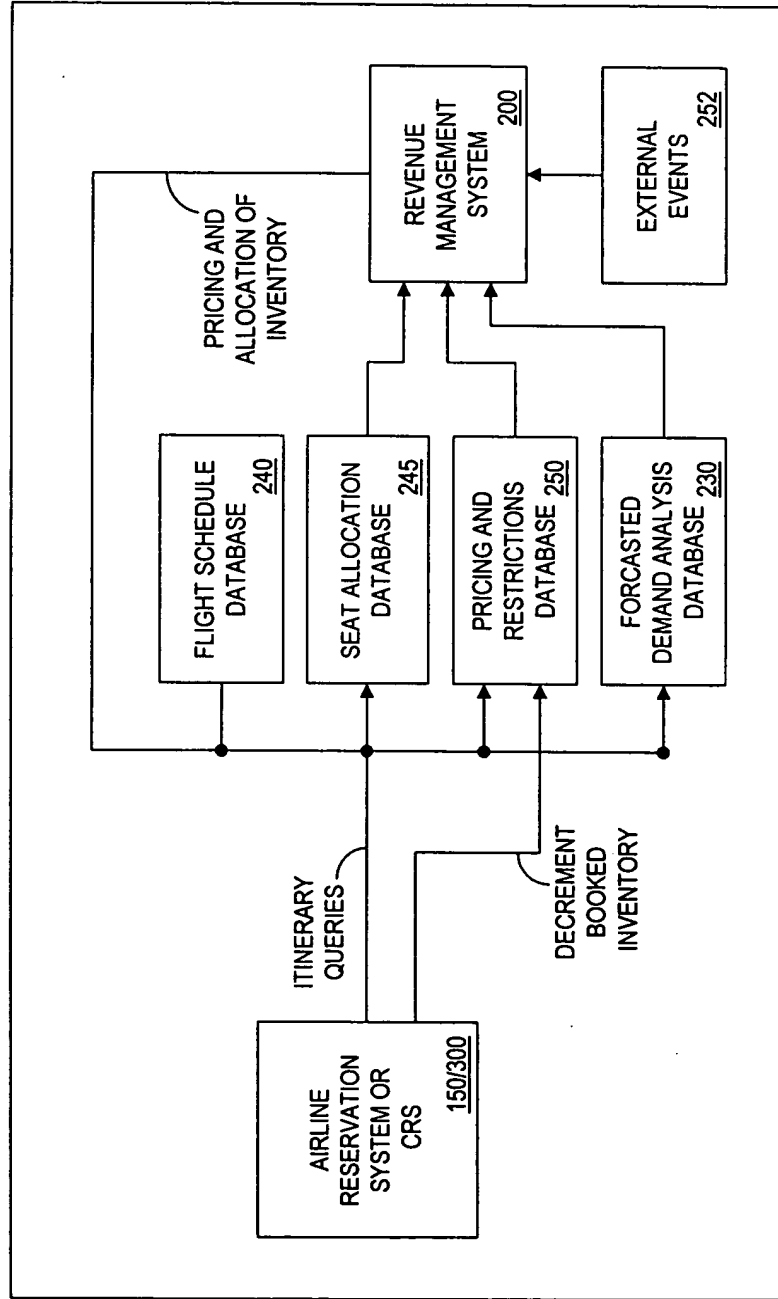


FIG. 4

NUMBER OF  
TICKETS SOLD /  
FARE CLASS

EXCESS  
CAPACITY  
DELTA  
530

FORECASTED  
SALES 520

ACTUAL  
SALES 510

0

FLIGHT  
ALLOCATION  
DATE 1/1/97

DEPARTURE  
DATE 1/1/98

**FIG. 5**

FORECASTED DEMAND ANALYSIS DATABASE 230

FLIGHT NUMBER	DEPARTURE DATE	ORIGINATING CITY	DESTINATION CITY	PRICE	CLASS	ACTUAL QUANTITY BOOKED	EXPECTED QUANTITY BOOKED
1234	3/3/97	NEW YORK (JFK)	LOS ANGELES (LAX)	\$349.00	Y	40	70
1234	3/3/97	NEW YORK (JFK)	LOS ANGELES (LAX)	\$339.00	Y	65	90
1234	3/3/97	NEW YORK (JFK)	LOS ANGELES (LAX)	\$329.00	Y	95	125
1234	3/3/97	NEW YORK (JFK)	LOS ANGELES (LAX)	\$409.00	K	7	20
1234	3/3/97	NEW YORK (JFK)	LOS ANGELES (LAX)	\$399.00	K	40	60

FIG. 6

FLIGHT SCHEDULE DATABASE 240

ORIGINATING AIRPORT	705	DESTINATION AIRPORT	710	DATE	715	TIME OF DEPARTURE	720	TIME OF ARRIVAL	725	AIRLINE	730	FLIGHT NUMBER	735	VIA	740
NEW YORK (JFK)		LOS ANGELES (LAX)		3/3/97		9:00 AM EST		11:00 AM PST		AA		1234		NON STOP	
NEW YORK (JFK)		LOS ANGELES (LAX)		3/3/97		10:30 AM EST		12:30 PM PST		AA		4567		ONE STOP	
NEW YORK (JFK)		LOS ANGELES (LAX)		3/3/97		1:30 PM EST		7:00 PM PST		AA		2345		NON STOP	
NEW YORK (JFK)		LOS ANGELES (LAX)		3/3/97						AA		A3467			
NEW YORK (JFK)		LOS ANGELES (LAX)		3/3/97		4:00 PM EST		6:30 PM PST		AA		9876		NON STOP	
NEW YORK (JFK)		LOS ANGELES (LAX)		3/3/97						UNITED		A4237			

FIG. 7

SEAT ALLOCATION DATABASE 245



FLIGHT NUMBER	DEPARTURE DATE	REMAINING INVENTORY K SEATS	REMAINING INVENTORY Y SEATS	TOTAL INVENTORY BOOKED
<u>805</u>	<u>810</u>	<u>815</u>	<u>820</u>	<u>825</u>
1234	3/3/97	33	20	247
4567	3/3/97	50	10	240
2345	3/3/97	5	5	290
9876	3/3/97	47	53	200
A3467	3/3/97	10	10	20

FIG. 8



PRICING AND RESTRICTIONS DATABASE 250



FLIGHT NUMBER 905	DATE 910	INVENTORY K PRICE 915	INVENTORY K RESTRICTION 920	INVENTORY Y PRICE 925	INVENTORY Y RESTRICTION 930
1234	3/3/97	\$399.00	NON STOP	\$339.00	NON STOP
4567	3/3/97	\$329.00	ONE STOP	\$369.00	ONE STOP
A3467	3/3/97	\$209.00	ONE STOP	\$209.00	ONE STOP

FIG. 9

RESERVATION DATABASE 255



FLIGHT NUMBER <u>1005</u>	ORIGINATING AIRPORT/ DESTINATION AIRPORT <u>1010</u>	CARRIER <u>1015</u>	CLASS <u>1020</u>	PRICE <u>1025</u>	PASSENGER NAME RECORD <u>1030</u>
1234	(JFK) - (LAX)	AMERICAN	K	\$399.00	XXXXX
A3467	(JFK) - (LAX)	AMERICAN	N/A	\$209.00	XXXXX

FIG. 10

```

graph TD
    1100[AIRLINE RMS ANALYZES ROUTE BASED INFORMATION STORED IN THE FORECASTED DEMAND ANALYSIS DATABASE INCLUDING: HISTORICAL DEMAND AND PRICING DATA PER FLIGHT AND DETERMINES HOW MANY FLIGHTS TO OFFER FOR A SPECIFIC ROUTE ON A DAY TO DAY BASIS] --> 1110[RMS TRANSMITS NUMBER OF FLIGHTS TO BE OFFERED, DATE OF FLIGHTS TO BE OFFERED, O/D PAIR, AND TIME PERIODS OF EACH FLIGHT TO AIRLINE SCHEDULING SYSTEM]
    1110 --> 1115[AIRLINE SCHEDULING SYSTEM CREATES FLIGHT RECORDS FOR EACH FLIGHT INCLUDING: FLIGHT NUMBER, O/D PAIR, DEPARTURE/ ARRIVAL TIMES AND DATE]
    1115 --> 1120[RMS FURTHER INSTRUCTS SCHEDULING SYSTEM TO CREATE A SPECIAL FARE LISTING FOR THAT ROUTE ON THAT DAY WITH THE SAME FLIGHT INFORMATION EXCLUDING AN ACTUAL FLIGHT NUMBER AND DEPARTURE/ARRIVAL TIMES]
    1120 --> 1125[AIRLINE SCHEDULING SYSTEM CREATES A SPECIAL FARE LISTING RECORD FOR THAT FLIGHT ON THAT DATE INCLUDING ALL FLIGHT INFORMATION EXCEPT DEPARTURE/ARRIVAL TIMES AND AN ACTUAL FLIGHT NUMBER. SPECIAL FLIGHT LISTING NUMBER IS SPECIFIED BY AN "A" IN FRONT OF THE NUMBER]
    1125 --> B((B))
    B --> FIG11B[TO FIG. 11B]

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FIG. 11A

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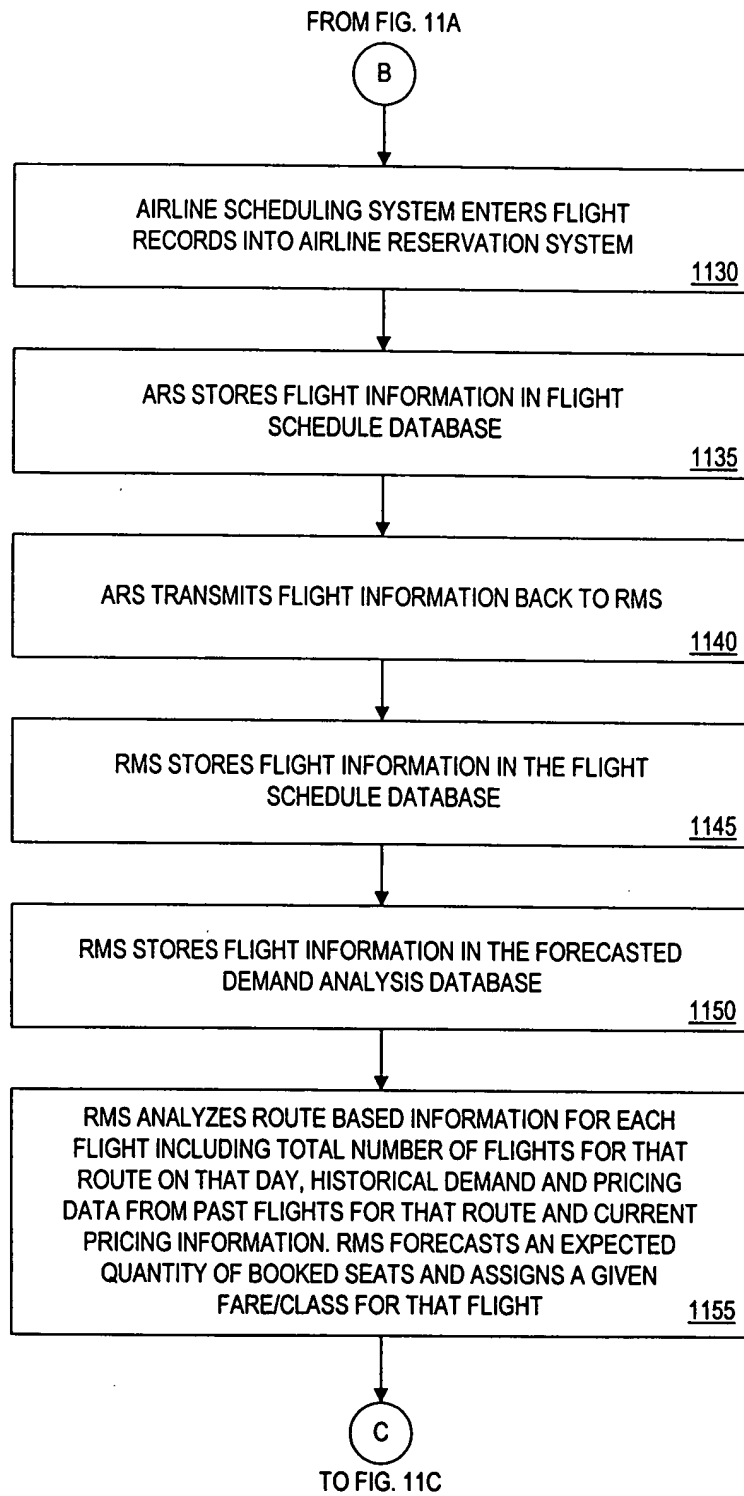


FIG. 11B

09548495-030300  
00000000-56481560

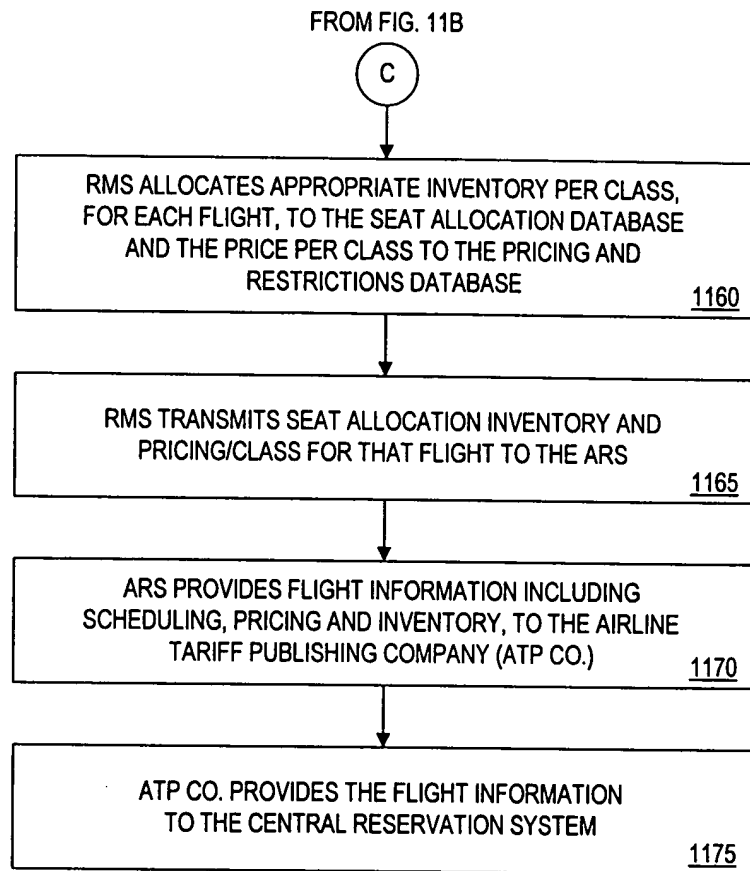


FIG. 11C

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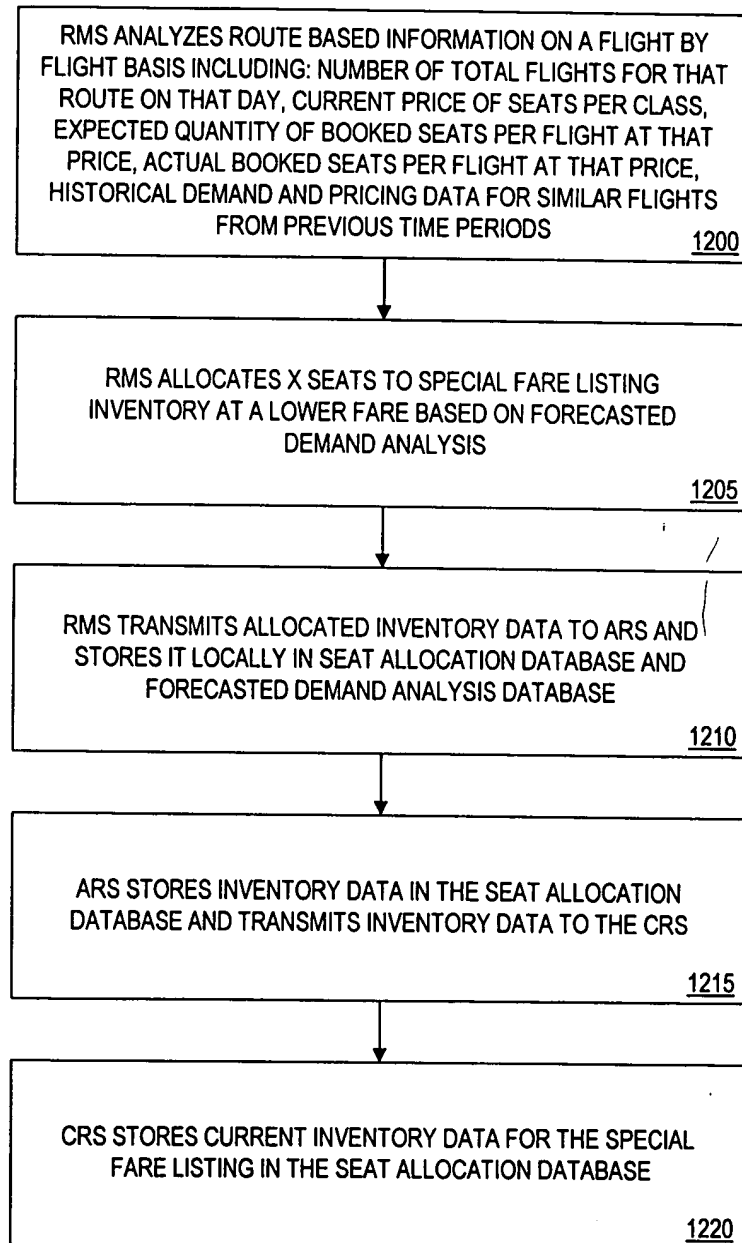


FIG. 12

```

graph TD
    1300["RMS ANALYZES FLIGHT INFORMATION STORED IN  
FORECASTED DEMAND ANALYSIS DATABASE INCLUDING:  
EXPECTED VS. ACTUAL QUANTITY OF SEATS BOOKED ON ACTUAL  
FLIGHTS FOR A SPECIFIC ROUTE ON A SPECIFIC DAY  
1300"] --> 1305["RMS EXTRACTS NUMBER OF SEATS ALLOCATED TO  
THE CORRESPONDING SPECIAL FARE LISTING FOR THAT  
ROUTE ON THAT DAY  
1305"]
    1305 --> 1310{"ARE THE  
ACTUAL FLIGHTS COMPLETELY  
BOOKED?  
1310"}
    1310 -- YES --> 1315["RMS ELIMINATES  
REMAINING INVENTORY  
ALLOCATED TO THE  
SPECIAL FARE LISTING  
1315"]
    1310 -- NO --> 1320{"ARE THERE  
MORE SPECIAL FARE  
BOOKINGS THAN SEATS REMAINING  
ON THE ACTUAL  
FLIGHTS?  
1320"}
    1320 -- YES --> 1315
    1320 -- NO --> 1325{"ARE THERE  
MORE SEATS REMAINING  
ON THE ACTUAL FLIGHTS THAN SEATS  
ALLOCATED TO THE SPECIAL  
FARE LISTING?  
1325"}
    1325 -- YES --> B((B))
    1325 -- NO --> 1330["RMS MAINTAINS  
CURRENT ALLOCATION OF  
INVENTORY TO THE  
SPECIAL FARE LISTING  
1330"]
    B --> 1330
    1330 --> 1335(( ))
    style 1335 fill:none,stroke:none
    1335 --> 1340(( ))
    style 1340 fill:none,stroke:none
    1340 --> 1345(( ))
    style 1345 fill:none,stroke:none
    1345 --> 1350(( ))
    style 1350 fill:none,stroke:none
    1350 --> 1355(( ))
    style 1355 fill:none,stroke:none
    1355 --> 1360(( ))
    style 1360 fill:none,stroke:none
    1360 --> 1365(( ))
    style 1365 fill:none,stroke:none
    1365 --> 1370(( ))
    style 1370 fill:none,stroke:none
    1370 --> 1375(( ))
    style 1375 fill:none,stroke:none
    1375 --> 1380(( ))
    style 1380 fill:none,stroke:none
    1380 --> 1385(( ))
    style 1385 fill:none,stroke:none
    1385 --> 1390(( ))
    style 1390 fill:none,stroke:none
    1390 --> 1395(( ))
    style 1395 fill:none,stroke:none
    1395 --> 1400(( ))
    style 1400 fill:none,stroke:none
    1400 --> 1405(( ))
    style 1405 fill:none,stroke:none
    1405 --> 1410(( ))
    style 1410 fill:none,stroke:none
    1410 --> 1415(( ))
    style 1415 fill:none,stroke:none
    1415 --> 1420(( ))
    style 1420 fill:none,stroke:none
    1420 --> 1425(( ))
    style 1425 fill:none,stroke:none
    1425 --> 1430(( ))
    style 1430 fill:none,stroke:none
    1430 --> 1435(( ))
    style 1435 fill:none,stroke:none
    1435 --> 1440(( ))
    style 1440 fill:none,stroke:none
    1440 --> 1445(( ))
    style 1445 fill:none,stroke:none
    1445 --> 1450(( ))
    style 1450 fill:none,stroke:none
    1450 --> 1455(( ))
    style 1455 fill:none,stroke:none
    1455 --> 1460(( ))
    style 1460 fill:none,stroke:none
    1460 --> 1465(( ))
    style 1465 fill:none,stroke:none
    1465 --> 1470(( ))
    style 1470 fill:none,stroke:none
    1470 --> 1475(( ))
    style 1475 fill:none,stroke:none
    1475 --> 1480(( ))
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    1485 --> 1490(( ))
    style 1490 fill:none,stroke:none
    1490 --> 1495(( ))
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    1495 --> 1500(( ))
    style 1500 fill:none,stroke:none
    1500 --> 1505(( ))
    style 1505 fill:none,stroke:none
    1505 --> 1510(( ))
    style 1510 fill:none,stroke:none
    1510 --> 1515(( ))
    style 1515 fill:none,stroke:none
    1515 --> 1520(( ))
    style 1520 fill:none,stroke:none
    1520 --> 1525(( ))
    style 1525 fill:none,stroke:none
    1525 --> 1530(( ))
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    1530 --> 1535(( ))
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    style 1540 fill:none,stroke:none
    1540 --> 1545(( ))
    style 1545 fill:none,stroke:none
    1545 --> 1550(( ))
    style 1550 fill:none,stroke:none
    1550 --> 1555(( ))
    style 1555 fill:none,stroke:none
    1555 --> 1560(( ))
    style 1560 fill:none,stroke:none
    1560 --> 1565(( ))
    style 1565 fill:none,stroke:none
    1565 --> 1570(( ))
    style 1570 fill:none,stroke:none
    1570 --> 1575(( ))
    style 1575 fill:none,stroke:none
    1575 --> 1580(( ))
    style 1580 fill:none,stroke:none
    1580 --> 1585(( ))
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    1585 --> 1590(( ))
    style 1590 fill:none,stroke:none
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    style 1595 fill:none,stroke:none
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    style 1605 fill:none,stroke:none
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    style 1615 fill:none,stroke:none
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    style 1620 fill:none,stroke:none
    1620 --> 1625(( ))
    style 1625 fill:none,stroke:none
    1625 --> 1630(( ))
    style 1630 fill:none,stroke:none
    1630 --> 1635(( ))
    style 1635 fill:none,stroke:none
    1635 --> 1640(( ))
    style 1640 fill:none,stroke:none
    1640 --> 1645(( ))
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    1645 --> 1650(( ))
    style 1650 fill:none,stroke:none
    1650 --> 1655(( ))
    style 1655 fill:none,stroke:none
    1655 --> 1660(( ))
    style 1660 fill:none,stroke:none
    1660 --> 1665(( ))
    style 1665 fill:none,stroke:none
    1665 --> 1670(( ))
    style 1670 fill:none,stroke:none
    1670 --> 1675(( ))
    style 1675 fill:none,stroke:none
    1675 --> 1680(( ))
    style 1680 fill:none,stroke:none
    1680 --> 1685(( ))
    style 1685 fill:none,stroke:none
    1685 --> 1690(( ))
    style 1690 fill:none,stroke:none
    1690 --> 1695(( ))
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    1695 --> 1700(( ))
    style 1700 fill:none,stroke:none
    1700 --> 1705(( ))
    style 1705 fill:none,stroke:none
    1705 --> 1710(( ))
    style 1710 fill:none,stroke:none
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    style 1715 fill:none,stroke:none
    1715 --> 1720(( ))
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    style 1730 fill:none,stroke:none
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    style 1855 fill:none,stroke:none
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    1860 --> 1865(( ))
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    1865 --> 1870(( ))
    style 1870 fill:none,stroke:none
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    style 1895 fill:none,stroke:none
    1895 --> 1900(( ))
    style 1900 fill:none,stroke:none
    1900 --> 1905(( ))
    style 1905 fill:none,stroke:none
    1905 --> 1910(( ))
    style 1910 fill:none,stroke:none
    1910 --> 1915(( ))
    style 1915 fill:none,stroke:none
    1915 --> 1920(( ))
    style 1920 fill:none,stroke:none
    
```

TO FIG. 13B

FROM FIG. 13A

B

RMS INCREASES SEATS ALLOCATED TO THE SPECIAL  
FARE LISTING INVENTORY

1335

FIG. 13B

09518495-030300



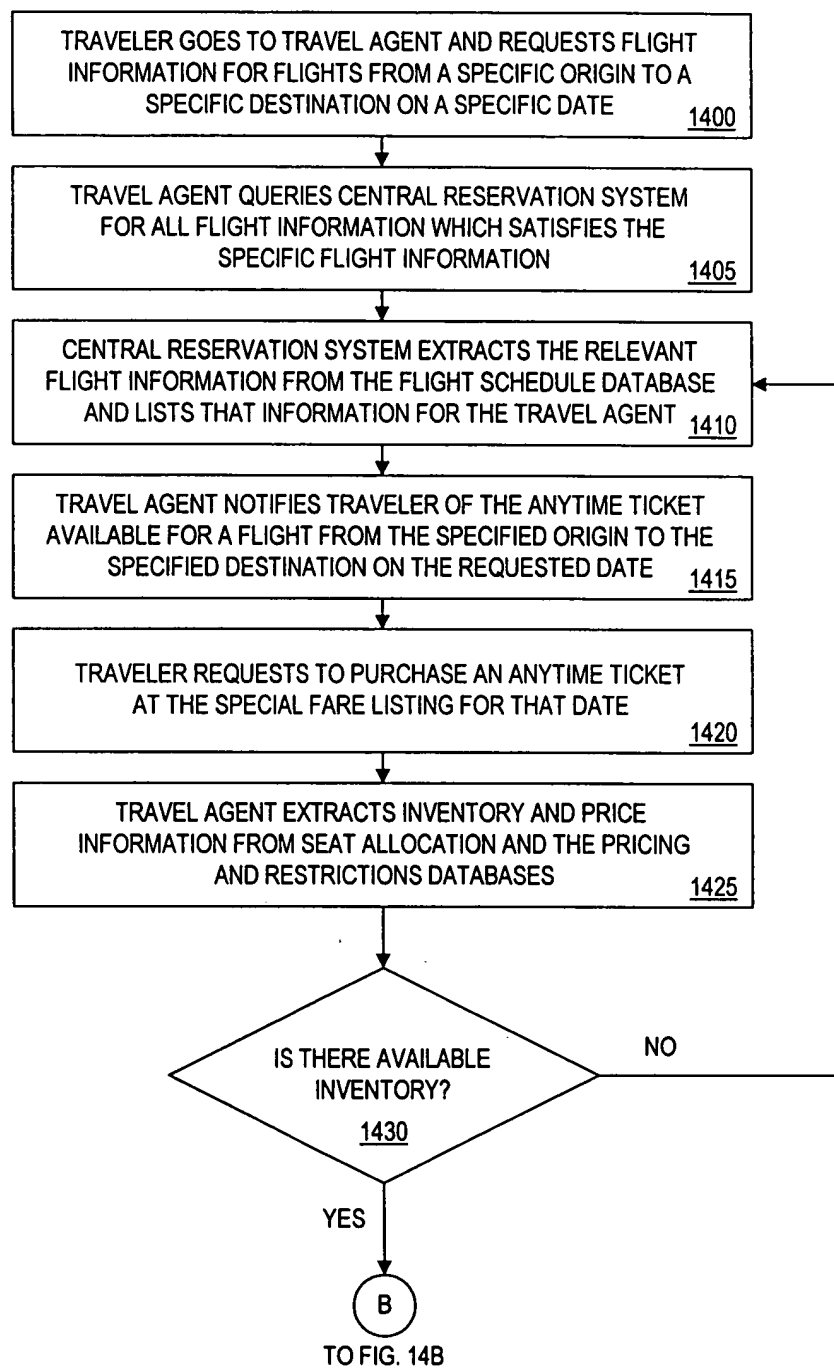


FIG. 14A

FROM FIG. 14A

B

TRAVEL AGENT CREATES PASSENGER NAME RECORD  
AND RESERVES A SEAT AT THE SPECIAL FARE LISTING FOR  
THAT ROUTE ON THE GIVEN DATE IN THE CENTRAL  
RESERVATION SYSTEM

1435

RESERVATION IS STORED IN THE RESERVATION DATABASE

1440

CRS MODIFIES THE RECORD FOR THE SPECIAL FARE  
LISTING IN THE SEAT ALLOCATION DATABASE BY  
DECREMENTING THE "REMAINING INVENTORY" BY "1" AND  
INCREMENTING THE "TOTAL INVENTORY BOOKED" BY "1"

1445

CENTRAL RESERVATION SYSTEM RECEIVES THE ACTUAL  
FLIGHT INFORMATION INCLUDING FLIGHT NUMBER AND  
DEPARTURE TIME IN REAL TIME AND DISPLAYS IT FOR  
THE TRAVEL AGENT

1446

CENTRAL RESERVATION SYSTEM ACCESSES THE SEAT  
ALLOCATION DATABASE AND UPDATES THE RECORDS  
FOR THE ACTUAL FLIGHT AND THE SPECIAL  
FARE LISTING ACCORDINGLY

1448

TRAVELER PURCHASES TICKET AND IS IMMEDIATELY  
NOTIFIED BY THE TRAVEL AGENT OF THE ACTUAL  
FLIGHT INFORMATION

1450

TRAVELER RECEIVES AIRLINE TICKET FOR THE ACTUAL FLIGHT

1455

FIG. 14B

```

graph TD
    1500[CRS TRANSMITS BOOKING INFORMATION TO AIRLINE'S  
ARS ON A REAL TIME BASIS] --> 1505[ARS STORES BOOKING INFORMATION LOCALLY AND  
TRANSMITS IT TO THE RMS]
    1505 --> 1510[RMS EXTRACTS ALL RESERVATIONS MADE ON THE SPECIAL  
FARE LISTING FOR A GIVEN ROUTE ON A GIVEN DATE]
    1510 --> 1515[RMS EXTRACTS ALL ACTUAL FLIGHTS WHICH MEET CRITERIA  
OF THE SPECIAL FARE LISTING: DATE AND O/D PAIR]
    1515 --> 1520[ON A FLIGHT BY FLIGHT BASIS, THE RMS ANALYZES  
INFORMATION STORED IN THE FORECASTED DEMAND  
ANALYSIS DATABASE INCLUDING: TOTAL NUMBER OF FLIGHTS  
FOR THAT ROUTE ON THAT DAY, PRICE/CLASS FOR EACH  
FLIGHT, AND THE EXPECTED VERSUS ACTUAL  
BOOKINGS PER FLIGHT PER CLASS]
    1520 --> 1525[RMS DETERMINES THAT ONE OR MORE FLIGHTS  
HAVE A DISCREPANCY BETWEEN THE ACTUAL  
AND EXPECTED BOOKINGS]
    1525 --> B((B))
    B --> 1526[TO FIG. 15B]
  
```

FIG. 15A

**B**



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